

named for him very shortly after his arrival in South Africa. Later in the day, the plants were placed in a small commemorative garden outside the Institute's building.

#### ACKNOWLEDGMENTS

Letters to Prain and to and from Thistelton-Dyer are in the archives at Kew, those to Jepson in the Jepson Herbarium, and those to Setchell in the University Herbarium, Berkeley. Obituaries of Burt Davy include those by M. D. Gunn (S. African J. Science 37:xvii-xix, 1940; Bothalia 4:45-46, 1941); J. Hutchinson (Nature 146:424, 1940); A. D. Cotton (J. Kew Guild 6:84-85, 1941 [1942]); A. J. H. Goodwin (Trans. Royal Soc. S. Africa 29:lxii, 1942); and J. Ramsbottom (Proc. Linn. Soc. Lond. 153:291-293, 1940-1941 [1942]). There is also an anonymous but informative biographical note inspired by the award of his Cambridge Ph.D. (Gard. Chron. 75:266, 1924). I am indebted to D. E. Johnson for scouring the files at the Hunt Institute for Botanical Documentation, L. Constance for reading the first draft of this sketch, and J. R. K. Kantor for archival assistance.

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(Submitted 6 Jun 1980; accepted 4 Jun 1980; final version received 3 Jun 1980.)

#### NOTEWORTHY COLLECTIONS

HEMIZONIA MINTHORNII Jeps. (ASTERACEAE: MADIINAE).—USA, CA, Ventura Co., Simi Hills, Sage Ranch (34°30'N, 118°40'W), 0.8 km nw. of Rocketdyne Laboratory on Black Canyon Rd, scattered on open, rocky, sandstone outcrops in crevices with *Eriogonum fasciculatum*, *Ribes indecorum*, *Prunus ilicifolia*, and *Eriodictyon* sp., 670 m, 28 Nov 1979, *Tanowitz 1803 and Whitmore* (UCSB); Los Angeles Co., Santa Monica Mts. (34°05'N, 118°44'W), Corral Canyon, at end of county-maintained Corral Canyon Rd, ca. 8.2 km (5.1 mi) e. of hwy 1, scattered on steep, sandstone outcrops in crevices with *Rhus laurina*, *Adenostoma fasciculatum*, and *Quercus dumosa*, 600 m, 11 Apr 1980, *Tanowitz 1848 and Gordon* (UCSB).

*Previous knowledge.* Known only from the type locality (34°16'N, 118°38'W)—a small population in chaparral on e. side of Santa Susanna Pass summit (480 m) on either side of Ventura-Los Angeles co. line. (Herbaria consulted: CAS, DS, JEPS, LA, MO, NY, POM, RSA, UC, UCSB, US; published sources: Munz, A Calif. fl. 1959; Munz, A fl. S. Calif. 1974; Abrams and Ferris, *Illus. fl. Pac. States*. 1960; Smith et al., *Inv. rare endang. vasc. pls. Calif.* CNPS Spec. Publ. 1, ed. 2. 1980; Raven and Thompson, *Fl. Santa Monica Mts., Calif.* 1966.)

*Significance.* Second and third sites for this narrow endemic. Considered "Rare and Endangered" by Smith et al. (op. cit.); the cited specimens were included in that de-

termination. More widely distributed in the Transverse Ranges than previously thought. Perhaps 500 individuals now have been seen, scattered in more or less contiguous populations on suitable substrates of arkosic, Upper Cretaceous sandstone. Many peaks between the three known localities have similar stratigraphy and may support yet other populations, but collecting is difficult due to steep terrain. There is little current endangerment but these populations should continue to be monitored.—BARRY D. TAN-OWITZ and PATRICIA J. GORDON, Department of Biological Sciences, University of California, Santa Barbara 93106. (Received 5 Dec 1979; returned 7 Dec 1979; revision received 25 Apr 1980; final version accepted 8 Jul 1980.)

*OTTELIA ALISMOIDES* (L.) Pers. (HYDROCHARITACEAE).—USA, CA, Butte Co., between Biggs and Richvale, Lattimore portion of California Rice Experiment Station, T19N R2E, ditch dividing S33 and S34: 8 Sep 1977, *Turner 541* (UC); 10 Sep 1977, *Seaman s.n.* (DA); 20 Sep 1977, *Barbe 2334 and Fuller* (CDA, UC). About 350 plants in flower and fruit in an 80-m interval of silt-bottomed, shallow drainage ditch. First observed by Bill W. Brandon, verified by Donald E. Seaman, California Rice Experiment Station.

*Previous knowledge.* Native to ne. Africa, Asia, Malay Archipelago, Australia. A weed apparently requiring control in Thailand, Indonesia, Japan, Taiwan. Naturalized in rice fields of n. Italy. Known previously in N.A. from Calcasieu and Cameron parishes, LA. Unconfirmed report of presence in Canada (Holm et. al., *Geog. atlas world weeds*. 1979). (Herbaria consulted: AHUC, CAS, CDA, CHSC, CPH, DA, HAY, HSC, JEPS, LA, RSA, SACT, SD, UC; published sources: Koch, Ber. Schweiz. Bot. Ges. 62:628–663. 1952; Ernst-Schwarzenbach, *Phytomorphology* 6:296–311. 1956; Van Steenis, *Fl. Malesiana* 5. 1958; Sculthorpe, *Biol. aq. vasc. pls.* 1967; Kaul, *Phytomorphology* 18:13–35. 1968; Dike, *Contrib. biol. Ottelia alismoides*, M.S. thesis, Univ. sw. Louisiana. 1969; Kaul, *Amer. J. Bot.* 56:951–959. 1969; Aston, *Aq. pls. Australia*. 1973; Cook, *Waterpls. of world*. 1974; USDA, *Econ. imp. foreign weeds*. 1977; Pancho and Soerjani, *Aq. weeds se. Asia*. 1978; Godfrey and Wooten, *Aq. wetl. pls. se. U.S.* 1979; Holm et. al., *op. cit.*) *Diagnostic characters.* Submersed or partly emersed, rooted aquatic with rosette growth habit; lvs variable, often broadly ovate, blade very thin; hermaphroditic fls with 3 white to pink epigynous petals, fls borne singly inside spathe; spathe with 2–10 longitudinal, crisped wings, 2 wings often larger, all sometimes reduced to ribs; fruit initially enclosed by spathe; seeds oblong to fusiform, 1.5–2 mm long, 0.5 mm wide.

*Significance.* New to w. N.A. A potentially serious weed of rice culture and slow-moving or still bodies of water. Population exterminated with sterilant (diuron) shortly after discovery, but many viable seeds had already been produced. (In two separate trials, 53 and 15 percent of scarified seeds germinated within two weeks at 20°C. No unscarified seeds germinated.) No plants seen since 1977. Plants observed should be reported to Donald E. Seaman, (916)868-5481, California Rice Experiment Station, P.O. Box 306, Biggs, CA 95917, or to Thomas C. Fuller, (916)445-4521, California Dept. Food and Agriculture, 1220 N. Street, Sacramento, CA 95814.—CHARLES E. TURNER, Department of Botany, University of California, Berkeley 94720. (Received 21 Feb 1980; accepted 3 Mar 1980; final version received 25 Jun 1980.)

*ELEUSINE TRISTACHYA* (Lam.) Lam. (POACEAE).—USA, CA, Imperial Co., Imperial Valley, Westmorland vegetable-growing area, 1979, *W. Isom s.n.* (UCR). A weed in the vegetable fields found in lighter textured soils.

*Previous knowledge.* Native to Argentina, Brazil, Paraguay, and Uruguay; adventive in various parts of the Old World, Australia, and USA. Known from NY, NJ, VA,



FIG. 1. Photographs of inflorescences and grains of *Eleusine tristachya* (A and C) and *E. indica* (B and D). Bar in A and B is 1 cm long. Bar in C (for C and D) is 0.5 mm long.

and 60 years ago collected several times in OR. The only New World taxon of a predominantly African genus. Poorly known because not included in Phillips's survey of African species of *Eleusine* Gaertn. (Phillips, Kew Bull. 27:251-270. 1972). (Herbaria consulted: K, MO, UC; published sources: Burbidge, Austral. grasses. 1. 1966; Hitchcock, Man. grasses U.S. 1950; Hitchcock and Cronquist, Fl. Pac. Northw. 1973). Hitchcock (1950, op. cit.) maintained that *E. tristachya* is native to tropical Africa and that it was introduced into tropical South America. Phillips (op. cit.), however, indicated that this species is not found in Africa except as a rare adventive. The presence of wild forms of *E. tristachya* in South America and their absence from Africa is indicative of the New World origin of this species. *Diagnostic characters*. Infl. of 2-3 terminal, digitately arranged, spicate branches; branches oblong or occasionally oblanceolate, compact, (1.5-)3-6(-8.2) cm long, 5-14 mm wide (Fig. 1A). Spikelets 5-9(-11) flowered, very closely overlapping on the rachis and perpendicular to it; lower glume 3.0-3.5 mm long; upper glume 4.2-5.0 mm long; lemma 4.0-5.1 mm long. Seed broadly oblong-globose, 1.0-1.2 mm long, obliquely ridged (Fig. 1C); pericarp membranous.

*Significance*. First record for CA. The occurrence of the species in CA and South America suggests that it could be present in Central America or Mexico but it has not been collected yet, or has been confused with *E. indica*. The latter is readily distinguished from *E. tristachya* by its slender 4-10(-17) terminal and subterminal spicate branches 3.5-15.5 cm long and 3.0-5.5 mm wide; spikelets less compact and obliquely arranged on the rachis (Fig. 1B); lower glume 1.1-2.3 mm long; upper glume 1.8-2.9 mm long; lemma 2.4-4.0 mm long; seeds oblong-ovate in outline, 1.0-1.3 mm long, obliquely striated (Fig. 1D); pericarp membranous. *E. tristachya* (Lam.) Lam. (Lamarck, Tabl. encycl. 1:203. 1791) is based on *Cynosurus tristachyus* Lam. (Lamarck, Tabl. encycl. 2:188. 1786). Kunth's combination was also based on *C. tristachyus* Lam. but was made at a later date (Kunth, Rev. Gram. 1:92. 1829) and is therefore invalid.—KHIDIR W. HILU, Department of Agronomy, University of Illinois, Urbana 61801. (Received 1 Aug 1979; returned 16 Aug 1979; revision accepted 26 Dec 1979; final version received 9 May 1980.)

SISYRINCHIUM MONTANUM E. L. Greene (IRIDACEAE).—USA, ID, Bonner Co., Round Prairie, 10.4 km s. of Canadian border at Kingsgate on hwy 95 (T65N R2E S29 ne.¼ ne.¼), 17 Jun 1979, *Cholewa and Cholewa* 230 (ID). Abundant. Population covering ca. 110 m<sup>2</sup> on a moist, narrow floodplain adjacent to Douglas-fir forest, 810 m. Associated with *Carex aurea*, *C. xerantica*, *Poa pratensis*, and *Festuca pratensis*. Flowers Jun-Jul. Verified by D. M. Henderson, Sep 1979.

*Previous knowledge.* Known in Rocky Mt. states and Canada e. of Continental Divide (w. of Divide only in Powell Co., MT). (Herbaria consulted: CAN, ID, MO, NY, UC, UTC, WIS, WS, WTU; published sources: Henderson, *Brittonia* 28:149. 1976.) Prior to Henderson's study this taxon was little understood and consequently was not recognized by Hitchcock et al. (Vasc. pls. Pac. Northw. 1. 1969), Hitchcock and Cronquist (Fl. Pac. Northw. 1973); nor Mosquin (Madroño 20:269. 1970). *Diagnostic characters.* Tepals with retuse to emarginate and aristulate apex, oblanceolate to elliptic; outer bract at least twice the length of the inner; densely caespitose.

*Significance.* First report for ID, a range extension of 800 km w. from Continental Divide.—ANITA F. CHOLEWA, Department of Biological Sciences, University of Idaho, Moscow 83843. (Received 14 Apr 1980; accepted 15 Apr 1980; final version received 24 Apr 1980.)

*ORYZOPSIS SWALLENII* Hitchc. & Spellenberg (POACEAE).—USA, WY, Sublette Co., dry plains bordering Cottonwood Cr. along e. side of hwy 189, 25 km n. of Big Piney, 2100 m, 18 Jul 1977, *Reveal 2079*, SD, UTC. Identified by A. H. Holmgren, UTC, 1979.

*Previous knowledge.* Known only from c. ID in se. Lemhi, w. Clark, and se. Custer cos. (Herbaria consulted: SD, UTC; published sources: Hitchcock and Spellenberg, *Brittonia* 20:162–165. 1968; Hitchcock, Univ. Wash. Publ. Biol. 17(1):629–635. 1969; Holmgren and Holmgren, *Intermt. fl.* 1:354. 1977). *Diagnostic characters.* Keys to *Oryzopsis* with some difficulty in Dorn (Man. vasc. pl. Wyo. 1977, p. 763–766), tending to be similar to *Stipa* as well. Will key nearest to *O. hymenoides* (Roem. & Schult.) Ricker ex Piper and *O. contracta* (Johnson) Shechter, but has caespitose culms to 4 dm tall; leaf blades 0.5 mm wide; glumes 5–6 mm long; lemma about 1.5 mm long, long-pilose, the awn 5–6 mm long.

*Significance.* First record for WY, a se. range extension of 250 km.—JACK L. REVEAL, San Diego Museum of Natural History, San Diego, CA 92112. (Received 9 Jun 1980; accepted 10 Jun 1980.)

*CAMPANULA SCABRELLA* Engelm. (CAMPANULACEAE).—USA, CA: Shasta Co., Lassen Volcanic National Park: Ski Heil Peak, T30N R4E S10 nw.¼, 100 m e. of summit, locally common in a 30 × 60-m population on s. slope of volcanic scree, 2660 m, 21 Jul 1979, *Heckard 5146* (JEPS) [plants first discovered on same peak, 26 Jul 1975 (*T. and S. Harris s.n.*, CAS) and independently by Dale E. Johnson and students in 1976]; summit of Loomis Peak, alpine fell-fields, 1 Aug 1978, *Showers 4218* (CAS); Siskiyou Co., Scott Mts.: n. side China Mt. 41°22'40.1"N, 122°34'28.2"W, 2604 m, on granodiorite, 3 Aug 1978, *Muth 7403* (PUA); e. ridge S. China Mt., 41°21'35"N, 122°34'58.1"W, 2438 m, on serpentine, 2 Aug 1978, *Muth 6762* (PUA); Cory Peak, on serpentine: w. ridge, 41°19'45"N, 122°36'30.1"W, 2219 m, 1 Aug 1978, *Muth 6901* (PUA); n. side, 41°19'59.3"N, 122°36'13.9"W, 1 Aug 1978, *Muth 6957* (HSU).

*Previous knowledge.* Cascade Mts. of c. WA and the Rocky Mts. of ID and MT, rare in OR and CA where its distribution as given in the literature is poorly documented and apparently erroneous. The species occurs in the Wallowa Mts. of OR (Mason, *Guide pls. Wallowa Mts. ne. Ore.* 1975) but no specimens have been found to document its occurrence on the high peaks of the Cascade Mts. of either OR or CA as given by Peck (Man. higher pls. Ore. 1961) and Abrams and Ferris (Illustr. fl. Pac. States. 1960) nor have any been re-collected on Scott Mt., which Engelm. cited as the type locality. In CA the species was known heretofore only on Mt. Eddy. (Herbaria consulted: CAS, DS, GH, HSU, JEPS, NY, ORE, OSC, POM, PUA, RSA, SOC, UTW, WTU, UC, US; other published sources: Shetler, *Rhodora* 65:319–337. 1963).



*Significance.* The Lassen National Park localities extend the range of the species 120 km se. and are the first records in the Cascade Mts. of CA. The collections in the Scott Mts., although only 10 km nw. of Mt. Eddy of the Trinity Mts., are the first documentation in that range since Engelmann's type collection in 1880. A question remains as to the precise locality of Engelmann's collection but the area can be limited to the China Mt.-Mt. Eddy region. China Mt. fits Engelmann's locality description in being directly "west of Mt. Shasta." However, searches in the area by Gilbert Muth and students have not discovered another associated Engelmann species, *Eriogonum alpinum*, which is known only on Mt. Eddy to the sw. of Mt. Shasta. That Engelmann was not on Scott Mt. as known today nor Scott Mt. of the 1894 quadrangle of the U.S. Geological Survey (=Bolivar Mt. and later Craggy Peak), is confirmed by the absence on these two peaks of *Pinus albicaulis* (Griffin and Critchfield, Distr. for. trees Calif. 1972), which Engelmann cited as an associated species. *Pinus albicaulis* is known in this region only in the China Mt.-Mt. Eddy area. I acknowledge the many persons who have searched specimens and supplied information in this inquiry, especially Gilbert Muth.—L. R. HECKARD, Jepson Herbarium, Department of Botany, University of California, Berkeley 94720. (Received 31 May 1980; accepted 10 Jun 1980; final version received 30 Jun 1980.)

ESCHSCHOLZIA CALIFORNICA Chamisso subsp. MEXICANA (Greene) C. Clark (PAPAV-ERACEAE).—México, Sonora, 11 km s. of Tónichi, thorn woodland on hillsides, with *Bursera*, *Fouquieria*, and *Jatropha*, 275 m, 22 Mar 1979, G. L. Webster 23817 (DAV).

*Previous knowledge.* Lowland AZ, e. to mts. around El Paso, TX, n. and w. into s. NV and adj. CA and UT, s. to just s. of Benjamin Hill, Sonora. (Herbaria consulted: CAS, DAV, DS, UC; published sources: Clark, Syst. Bot. 3:374–385. 1978; Jepson, Fl. Calif. 7. 1922; Munz, A Calif. fl. 1959.)

*Significance.* Nearly 150 km s. of previous s.-most locality and well out of the desert to which this subsp. was thought to be restricted. The locality is in "thorn forest" as described from the Rio Mayo area by Gentry (Publ. Carnegie Inst. Wash. 527:27–30. 1942). Brown and Lowe (USDA For. Serv. Gen. Tech. Rep. RM-41. 1977) designate the vegetation of this area as "Sinaloa thorn scrub".—CURTIS CLARK and GRADY L. WEBSTER, Department of Botany, University of California, Davis 95616. (Received and accepted 17 Oct 1979; final version received 17 Apr 1980.)

For all taxa reported below, herbaria consulted are BRY, COLO, CS, KANU, RM, USFS, UTC; published sources are: Barkley, Atlas fl. Great Plains. 1977; Booth and Wright, Fl. Mont. 1966; Cary, N. Amer. fauna. 42. 1917; Correll and Johnston, Man. vasc. pls. Tex. 1970; Cronquist et al., Intermt. fl. 1977; Davis, Fl. Idaho. 1952; Dorn, Man. vasc. pls. Wyo. 1977; Fernald, Gray's man. bot, ed. 8. 1950; Gleason and Cronquist, Man. vasc. pls. ne. U.S. adj. Can. 1963; Harrington, Man. pls. Colo. 1954; Hermann, Man. Carices Rocky Mts. and Colo. Basin. 1970; Hermann, Man. *Juncus* Rocky Mts. and Colo. Basin. 1975; Hitchcock and Chase, Man. grasses U.S. 1950; Hitchcock and Cronquist, Fl. Pac. Northw. 1973; Hitchcock et al., Vasc. pls. Pac. Northw. 1–5. 1955–1969; Kearney and Peebles, Ariz. fl. 1964; Little, Atlas U.S. trees. 1. 1971; McVaugh, N. Amer. fl. 32A:78, 79. 1943; Moore, Rhodora 40:135, 136. 1938; Munz, A Calif. fl. 1959; Munz, Aliso 7:65–71. 1969; Scoggan, Fl. Can. 1978, 1979; Wahl, Bartonia 27:1–46. 1954; Weber, Univ. Colo. studies, ser. biol. 23:1–24. 1966; Weber and Johnston, Nat. hist. inv. Colo. 1. 1976; Welsh and Moore, Utah pls. 1973; Woodson, Ann. Missouri Bot. Gard. 41:1–211. 1954. All collections are in RM unless otherwise indicated.

*ASCELIPIAS INCARNATA* L. (ASCLEPIADACEAE).—USA, WY, Big Horn Co., hwy 32, 3.2 km sw. of Lovell (T56N R96W S28), roadside ditch with *Elaeagnus*, *Juncus*, *Populus*, and *Salix*, 1190 m, 25 Jul 1978, *Dorn 3151*.

*Previous knowledge.* Moist to wet soils near water in e. N.A., w. to s. Manitoba (Scoggan), c. ND (Barkley), sw. SD, w. NE, e. CO, e. NM (Woodson); and n. UT (Welsh and Moore). *Diagnostic characters.* Keys to *A. hallii* A. Gray in Dorn (p. 119). Plants to 1.5 (2) dm high; leaves opposite; calyx 1–2 mm long; corolla bright pink, 4–6 mm long; hoods paler pink, 2–3 mm long; horns surpassing the hoods, strongly incurved.

*Significance.* First record for WY, a range extension of 370 km from Custer and Fall River cos., SD.

*HAPLOPAPPUS ANNUUS* (Rydb.) Cory (ASTERACEAE).—USA, WY, Goshen Co., 9.7 air km ne. of Lingle (T26N R62W S15 se.¼), common on sandy clay in borrow pit and at end of abandoned field, 1340 m, 27 Sep 1978, *Nelson 2415*. Synonyms: *Machaeranthera annua* (Rydb.) Shinnery; *M. phyllocephala* (DC.) Shinnery var. *annua* (Rydb.) Shinnery.

*Previous knowledge.* Annual of open habitats, w. NE, w. KS, e. CO, OK, and n. TX (Barkley). *Diagnostic characters.* Keys to *H. multicaulis* (Nutt.) A. Gray or *H. lanceolatus* (Hook.) T. & G. in Dorn (p. 391) but is densely glandular-pubescent (vs. eglandular) and annual (vs. perennial).

*Significance.* First record for WY, a range extension from Weld Co., CO (150 km) and Garden and Sheridan cos., NE (160 km) (Barkley).

*MATRICARIA MARITIMA* L. (ASTERACEAE).—USA, WY, Carbon Co., 3.2 km w. of Hog Park Reservoir (T12N R85W S2), several plants in disturbed area near road, 2620 m, 27 Aug 1977, *Hammel and Hartman 546*. Synonym: *M. inodora* L. var. *maritima* (L.) Wahlenb.

*Previous knowledge.* European weed on roadsides and in waste places; e. N.A. (Gleason and Cronquist); ND, s. NE, n. KS (Barkley), MT (Booth and Wright), CO (Weber and Johnston), ID (Davis), WA, and OR. *Diagnostic characters.* Keys to *M. chamomilla* L. in Dorn (p. 422) but differs in that plants are nearly inodorous (vs. aromatic); the receptacle is hemispheric, rounded (vs. conic, pointed); and the achenes have two marginal (vs. nearly marginal) and 1 (vs. 3) ventral, strongly callous-thickened, almost winglike (vs. simply raised) ribs, and are minutely roughened (vs. smooth) on back and between the ribs (Hitchcock and Cronquist).

*Significance.* First record for WY, a range extension of ca. 350 km from s. CO.

*ALYSSUM MINUS* (L.) Rothm. var. *MICRANTHUM* (C. A. Meyer) Dudley (BRASSICACEAE).—USA, WY, Campbell Co.: hwy 14-16, 9.7 km se. of Horse Creek Butte (T53N R73W S17), 1280 m, 5 Jun 1978, *Dueholm and Hartman 1852*; T56N R75W S28, 6 Jun 1978, *Hartman and Dueholm 6121*; T56N R72W S31, 7 Jun 1978, *Hartman and Dueholm 6236*; T53N R72W S31, 6 Jul 1978, *Dueholm and M. A. Sanguinetti 3392*; T55N R72W S26, 8 Jul 1978, *Dueholm and M. A. Sanguinetti 3567*; Converse Co.: 3.2 km w. of Douglas (T32N R72W S3,10), 20 May 1968, *R. L. Tresler 407* (distributed as *A. alyssoides*); T40N R71W S33, 3 Jun 1978, *Hartman and Dueholm 5840*; T40N R71W S14,23, 3 Jun 1978, *Hartman and Dueholm 5847*. Disturbed roadsides and plains.

*Previous knowledge.* Eurasian weed of disturbed sites, known in US from CA (Munz, 1969), CO (Weber), NM (COLO), UT (UTC), and KS (KANU). *Diagnostic characters.* Keys to *A. alyssoides* (L.) L. in Dorn (p. 516) but differs in having sepals 1.5–2 (vs. 2–3.5) mm long, soon deciduous (vs. persistent); fruits 4–5.5 (vs. 3–4) mm long, coarsely (vs. finely) stellate pubescent with trichome branches often 0.3–0.5 (vs. less than 0.2) mm long; styles 1–2 (vs. 0.2–0.5) mm long.

*Significance.* First records for WY, a range extension of ca. 230 km from Larimer Co., CO.

*LOBELIA SIPHILITICA* L. var. *LUDOVICIANA* A. DC. (CAMPANULACEAE).—USA, WY, Goshen Co., s. of golf course along the North Platte R., 2 air km sw. of Torrington (T24N R61W S17 ne.¼), infrequent in sandy soil in river bottom with *Scirpus*, 1250 m, 26 Sep 1978, *Nelson 2372*.

*Previous knowledge.* Variety *ludoviciana* found in moist, often shaded places from WI and sw. Manitoba (Scoggan), s. to e. TX, e. CO (Harrington), and Central America. *Diagnostic characters.* Keys to *Porterella* Torr. in Dorn (p. 164) but differs in that the corolla tube is split to near the base (vs. not split) and that the filament tube is 12 mm or more (vs. less than 8 mm) long.

*Significance.* First record of the genus for WY, a range extension of ca. 30 km from Scotts Bluff Co., NE.

*ARENARIA SERPYLLIFOLIA* L. (CARYOPHYLLACEAE).—USA, WY, Lincoln Co.: Strawberry Cr., 1.3 km e. of hwy 89 (T34N R119W S36), 1840 m, 10 Jun 1978, *Harrison 242*; 0.3 km e. of hwy 89 (T34N R119W S36), gravel soil of old stream flood plain in opening of *Populus* with *Antennaria microphylla*, *Arnica sororia*, *Erigeron pumilus*, and *Gilia*, 1830 m, 23 Jun 1978, *Harrison 241*; Sheridan Co., Little Bighorn R. Canyon, 27 air km w. of Parkman (T58N R90W S25), grassy slopes and limestone outcrops with *Alyssum*, *Astragalus*, *Danthonia*, and *Festuca*, 1700 m, 25 Jun 1979, *Hartman and Odasz 9369*.

*Previous knowledge.* Eurasian, naturalized in disturbed sites throughout much of temperate N.A. (Gleason and Cronquist); e. N.A., w. to e. NE, e. and c. KS and OK (Barkley), and c. TX (Correll and Johnston); CA (Munz, 1959) to s. B.C. (Scoggan), e. to ID (Davis) and w. MT (Booth and Wright); also CO (Harrington). *Diagnostic characters.* Keys to *A. lateriflora* in Dorn (p. 184), but differs as follows: taprooted annual (vs. rhizomatous perennial), leaves ovate (vs. elliptic-oblong to lanceolate), 3–6 (vs. 5–30) mm long, and sepals acute (vs. rounded).

*Significance.* First records for WY, a range extension of ca. 270 km from Gallatin Co., MT.

*ATRIPLEX HETEROSPERMA* Bunge (CHENOPODIACEAE).—USA: NE, Scotts Bluff Co., bank of Platte River, 0.8 km s. of Mitchell, 21 Sep 1970, *Stephens 45499* (KANU); SD: Butte Co., bank of Indian Cr., 4.8 km s. of Newell, 17 Sep 1970, *Stephens 45397* (KANU); Fall River Co., 16.1 km n. of Ardmore, 20 Sep 1970, *Stephens 45470* (KANU); Hughes Co., 0.8 km e. of Blunt, 15 Sep 1972, *Stephens 61718* (KANU); Hyde Co., 22.5 km s. of Highmore, 16 Sep 1972, *Stephens 61792* (KANU); Meade Co., 6.5 km e. and 10.5 km n. of Sturgis, 17 Sep 1970, *Stephens 45413* (KANU); WY: Albany Co., Bamforth Lake (T16N R74W S6), 2135 m, 25 Sep 1977, *Hartman and Hammel 5090*; Big Horn Co., 19 km wsw. of Basin (T50N R95W S10), 1280 m, 24 Aug 1977, *R. G. and V. Schreibeis R-1078*; Campbell Co.: Spotted Horse Cr., 6.5 km nw. of Spotted Horse (T55N R75W S16 nw.¼), 1160 m, 19 Sep 1978, *Nelson 2090*; T55N R75W S4 ne.¼, 19 Sep 1978, *Nelson 2104*; T58N R70W S32 nw.¼, 20 Sep 1978, *Nelson 2166*; Goshen Co.: near Springer Reservoir (T22N R62W S14 se.1/4), 1280 m, 28 May 1976, *Luce 13*; T19N R61W S5 sw.¼, 25 Sep 1978, *Nelson 2328*; T23N R60W S17 se.¼, 26 Sep 1978, *Nelson 2401*; T28N R62W S7 nw.¼, 27 Sep 1978, *Nelson 2443*; T22N R62W S10 ne.¼, 28 Sep 1978, *Nelson 2487*; Johnson Co.: hwy 387, 12 air km ne. of Edgerton (T41N R78W S25), 1620 m, 17 Sep 1978, *Nelson 1938*; T41N R77W S36 se.¼, 17 Sep 1978, *Nelson 1941*; Natrona Co., hwy 387, 3.5 air km ne. of Edgerton (T40N R78W S8), 1520 m, 17 Sep 1978, *Nelson 1937*. Moist, disturbed, often alkaline roadsides, ditches, lake or pond margins, and bottom lands. Associates include *Aster pauciflorus*, *Atriplex patula* subsp. *hastata*, *Chenopodium*, *Conyza*, *Kochia*, *Populus*, *Salix*, and *Suaeda*.

*Previous knowledge.* Weedy halophyte of s. USSR, reported in N.A. from CO and MT (Weber), MN and ND (Barkley), and WY (Dorn). Also known from Cache Co., UT and Washoe Co., NV (UTC).

*Significance.* First records for NE and SD. The collections by Stephens were distrib-

uted under *A. patula* L. Dorn (p. 222) gave the WY distribution of this species as Albany Co., based on a 1974 collection (*Dorn* 2367). Apparently it has been overlooked for some time, being rather widespread in the e. half of WY. Although this taxon was first reported for N.A. by Weber, it is not a recent introduction as evidenced by a much earlier CO collection (Weld Co., Windsor, near the river, 3 and 14 Oct 1924, *Osterhout* 6361) distributed as *Atriplex hastata* L.

**CHENOPODIUM WATSONII** A. Nels. (CHENOPODIACEAE).—USA, WY, Laramie Co., along hwy I-25, ca. 1.6 km n. of CO border (T12N R67W), disturbed area with *Chenopodium album* and *Salsola*, 1890 m, 7 Aug 1977, *Dorn* 2999. Verified by D. J. Crawford, OS, Apr 1979.

*Previous knowledge.* Dry, disturbed sites, w. SD, MT, CO, w. KS, n. NM, and AZ (Wahl). *Diagnostic characters.* In WY, most closely resembles *C. fremontii* S. Wats. and *C. atrovirens* Rydb., but differs in that the perianth entirely conceals (vs. spreads to expose) the mature fruit and the pericarp is adherent to the seed (vs. separating easily from the seed).

*Significance.* First record for WY, a range extension of ca. 10 km from adjacent Weld Co., CO.

**SALSOLA COLLINA** Pall. (CHENOPODIACEAE).—USA, WY, Laramie Co., hwy 85 at CO border (T12N R66W S16), disturbed area with *Kochia*, *Melilotus*, and *Grindelia*, 1890 m: 6 Aug 1977, *Dorn* 2993; 25 Sep 1977, *Dorn* 3054.

*Previous knowledge.* Eurasian weed first reported in N.A. from se. MN in 1938 (Moore), now known from w. MN, w. IA (BRY), ND, se. SD, ne. and s. NE, w. KS, MT (Booth and Wright), and e. CO (Barkley). *Diagnostic characters.* Keys to *S. kali* L. (*S. iberica* Sennen & Pau) in Dorn (p. 239) but differs in that young plants virgate (vs. diffusely branched and bushy), developing lateral branches with age; in fruit, leaves and bracts erect to somewhat spreading (vs. widely spreading), weakly (vs. strongly) spine-tipped and not markedly (vs. markedly) pungent to the touch, concealing (vs. exposing) the calyx and forming (vs. not forming) a bony, burlike disseminule, the calyx segments each with an inconspicuous (vs. conspicuous, irregularly lobed and toothed, prominently veined) transverse wing from the back, less than 0.3 (vs. 2.0–3.0) mm long.

*Significance.* First record for WY, a range extension of ca. 130 km from Yuma Co., CO.

**CAREX RETRORSA** Schwein. (CYPERACEAE).—USA, WY, Crook Co., draw on s. side of Carlson Ridge (T54N R62W S7), wet ravine with *Juncus* and *Lycopus*, 1460 m, 4 Sep 1977, *Dorn* 3032.

*Previous knowledge.* Wet places, Quebec to B.C., s. to NJ, OH, IA (Hermann), sw. SD (Barkley), nw. MT (Hitchcock), e. ID, and ne. OR (Cronquist); also CO (Harrington). *Diagnostic characters.* Keys to leads for *C. hystericina*, *C. rostrata*, and *C. vesicaria* in Dorn (p. 603). Spikes 4–10, the upper 1–4 staminate, the lower pistillate, the middle sometimes androgynous; scales lanceolate, acute to cuspidate, shorter than perigynia; perigynia inflated, the upper widely spreading, the middle and lower usually reflexed, 7–10 mm long, ca. 3 mm wide, the beak 2–3.5 mm long; achenes trigonous, 2.5 mm long.

*Significance.* First record for WY, a range extension of ca. 100 km from Custer and Pennington cos., SD (Barkley).

**CAREX VULPINOIDEA** Michx. (CYPERACEAE).—USA, WY: Campbell Co., Arco Coal Cr. Study Area, 40 km s. and 6 km e. of Gillette (T46N R70W S33), 1430 m, 23 Aug 1976, *W. R. and D. B. Keammerer* CC-284; Sheridan Co., Big Horn Coal Site, 9.7 km n. of Sheridan (T57N R84W S22 nw.¼), sandy soil adjacent to stream channel, 1130 m, 1 Jul 1977, *Brink* 1380.

*Previous knowledge.* Wet places, Newfoundland to B.C., s. to FL (Hermann), TX



(Correll and Johnston), AZ; apparently missing from UT, NV, and CA (Cronquist). *Diagnostic characters.* Keys to *C. diandra* Schrank in Dorn (p. 593) but leaf sheaths conspicuously cross-rugose (vs. smooth) and immaculate (vs. speckled with red) ventrally.

*Significance.* First records for WY, a range extension from Treasure Co., MT (160 km) and adjacent counties of SD (120 km) (Barkley).

*CYPERUS ACUMINATUS* Torr. & Hook. (CYPERACEAE).—USA, WY, Campbell Co., 13 air km ne. of Gillette (T51N R71W), in a playa with *Agropyron*, *Cirsium arvense*, *Eleocharis macrostachya*, *Hordeum*, and *Rumex*, 1340 m, 2 Sep 1978, *Schreibeis and Luther E 78-99*.

*Previous knowledge.* Wet places, VA to OH, IL, MN, ND, and WA, s. to n. FL, TX (Fernald), Coahuila, and CA (Correll and Johnston). *Diagnostic characters.* Keys to *C. aristatus* Rottb. in Dorn (p. 638), but differs principally in having 3-nerved (vs. 5- to 9-nerved) scales with apices that are recurved-acuminate (vs. squarrose-recurved with awns 0.3–1 mm long).

*Significance.* First record for WY, a range extension of ca. 150 km from Custer Co., SD (Barkley).

*DIPSACUS SYLVESTRIS* Huds. (DIPSACACEAE).—USA, WY, Platte Co., along Wheatland Cr., 1.6 km n. of Wheatland (T24N R68W), growing in a two-acre area along creek, 1430 m, Aug 1976, *Hohnholt s.n.*

*Previous knowledge.* European weed, naturalized through much of the U.S.; ME to MI, se. SD (Barkley), MT (Booth and Wright), and WA, s. to NC, TN (Fernald), AR, OK (Barkley), CO (Harrington), and CA (Munz, 1959). Keys to Compositae in Dorn (p. 56).

*Significance.* First record for WY, a range extension of ca. 340 km from Cheyenne Co., KS (Barkley).

*DALEA ENNEANDRA* Nutt. (FABACEAE).—USA, WY, Weston Co., near Clifton Canyon (T42N R60W S5 nw.  $\frac{1}{4}$  se.  $\frac{1}{4}$ ), open areas of *Pinus ponderosa*, 1220 m, 18 Jul 1976, *Schreibeis EW-1*. Synonym: *Dalea laxiflora* Pursh.

*Previous knowledge.* Dry prairies and plains from w. IA, w. to e. MT (Barkley), and s. to MS, TX, NM (Correll and Johnston). *Diagnostic characters.* Differs from *D. aurea* Nutt. ex Pursh, the other WY species of this genus, as follows: plants glabrous (vs. silky-canescens); leaflets conspicuously (vs. minutely) gland-dotted beneath; flowers white (vs. yellow), 5–6 (vs. 9–15) mm long, in a lax (vs. densely congested) spike 4–5 (vs. 14–25) mm broad.

*Significance.* First record for WY, a range extension of ca. 20 km from adjacent Custer and Pennington cos., SD (Barkley).

*JUNCUS COMPRESSUS* Jacq. (JUNCACEAE).—USA, WY: Carbon Co.: flood plain of Medicine Bow R., 0.8 km n. of Medicine Bow (T22N R78W S5), abundant in wet sandy soil around pool, 2020 m; 8 Aug 1973, *Stephens 70504* (KANU, NY: distributed as *J. gerardii* Loisel., verified by J. C. Coffey, NCSC, Mar 1979); 31 Jul 1979, *Nelson and Hartman 4215*; Seminole Reservoir, 16 air km sse. of Seminole Dam (T24N R84W S14,24), 1950 m, 11 Jul 1979, *Hartman 9921*; Converse Co., North Platte R., 10.4 air km e. of Glenrock (T33N R74W S9), 1520 m, 9 Aug 1979, *Dueholm 8816*; Johnson Co., 27.2 air km se. of Buffalo (T48N R81W S24), 1370 m, 29 Jun 1979, *Dueholm 7447*; Natrona Co.: North Platte R., 1.6 air km e. of Pathfinder Reservoir Dam (T29N R83W S19), 1740 m, 11 Jul 1979, *Hartman 9958, 9959*; oil field, 6.8 air km n. of Waltman (T36N R86W S6 and R87W S1), 1900 m, 12 Jul 1979, *Hartman 10037*.

*Previous knowledge.* Wet meadows and brackish marshes from Newfoundland and Nova Scotia, w. to w. Manitoba (Scoggan); Beaverhead Co., MT; Larimer Co., CO

(Hermann); Eurasia. *Diagnostic characters*. Keys to *J. confusus* Cov. in Dorn (p. 824), but has obtuse (vs. acuminate) perianth segments 1.5–2.5 (vs. 3.5–4) mm long.

*Significance*. First records for WY; the southernmost WY locality is ca. 180 km nw. of the CO site.

*ABIES CONCOLOR* (Gord. & Glend.) Lindl. ex Hildebr. (PINACEAE).—USA, WY, Sweetwater Co., Little Mt. (T13N R105W), growing with *Populus tremuloides*, 2530 m, 28 May 1977, *Dorn 2893*.

*Previous knowledge*. Mt. slopes, se. ID, c. CO, w. and c. NM, w. to w. OR, w. CA, and n. Baja Calif. (Little).

*Significance*. Included in Dorn based on a report (Cary) of its occurrence in s. Sweetwater and Uinta cos., although it was not recorded for WY by Little. This is the only WY collection known to the authors.

*CRYPISIS ALOPECUROIDES* (Pill. & Mitterp.) Schrad. (POACEAE).—USA, WY, Goshen Co.: Springer Reservoir, 2.4 air km s. of Yoder (T22N R62W S10 se.¼), 1310 m, 28 Sep 1978, *Nelson 2497*; Hawk Springs Reservoir, 10.5 air km se. of Hawk Springs (T20N R61W S9 se.¼), 1360 m, 28 Sep 1978, *Nelson 2523*. Common in dry sandy clay left by receding reservoirs. Associates include *Cyperus*, *Gnaphalium*, *Leptochloa*, *Spergularia*, and *Suckleya*.

*Previous knowledge*. Weedy species of Europe and n. Africa to Iraq; introduced near Philadelphia, PA, and Portland, OR, and spreading in w. U.S. in n. CA (RM), w. and ne. NV (UTC), w. UT (BRY), w. OR, sw. WA, s. ID (Cronquist), and s. MT (MONT). *Diagnostic characters*. Keys to *Alopecurus* in Dorn (p. 701), but differs in having glumes unequal (vs. subequal); lemmas exceeding (vs. equal to or shorter than) the glumes, awnless (vs. awned from middle or below); palea slightly shorter than the lemma (vs. absent).

*Significance*. First record of the genus for WY, a range extension of ca. 350 km from s. MT.

*LEPTOCHLOA FASCICULARIS* (Lam.) A. Gray (POACEAE).—USA, WY, Goshen Co.: 16 km sse. of Torrington, 1250 m, Sep 1969, *Tresler 425*; T22N R62W S10 se.¼, 28 Sep 1978, *Nelson 2498*; T20N R61W S9 se.¼, 28 Sep 1978, *Nelson 2522*. Saline fields and on dry sandy clay left by receding reservoirs. Associates include *Crypsis*, *Cyperus*, *Gnaphalium*, *Spergularia*, and *Suckleya*.

*Previous knowledge*. Growing in shallow, brackish or alkaline water of marshes, ditches, and ponds, NH to ND, CO, UT, and WA, s. to FL, TX, and CA; s. through tropical America to Argentina (Hitchcock and Chase). *Diagnostic characters*. Keys to *Eragrostis* in Dorn (p. 706), but differs by having membranous (vs. ciliate) ligules and lemmas appressed-pubescent (vs. glabrous) along the lateral nerves.

*Significance*. First record of the genus for WY, a range extension of ca. 120 km from Dawes Co., NE (Barkley).

*POLYGONUM PENNSYLVANICUM* L. (POLYGONACEAE).—USA, WY: Goshen Co., NE border, 13 km se. of Torrington (T24N R60W S34 se.¼), roadside ditch with *Kochia* and *Helianthus*, 1220 m, 20 Aug 1977, *Dorn 3021*; Crook Co., 12.8 air km nne. of New Haven (T56N R66W S7, 8), eroded, loose, shaley ridge with oak and pine, 1160 m, 26 Jul 1978, *Dueholm 4992*. Synonym: *Persicaria pensylvanica* (L.) Gomez.

*Previous knowledge*. A highly variable weedy species ranging from Nova Scotia and Quebec to MN (Gleason and Cronquist), ND, MT (Booth and Wright), w. SD, and e. CO (Barkley), s. to FL, TX, and AZ; Mexico (Kearney and Peebles). *Diagnostic characters*. Keys to couplet for *P. lapathifolium* and *P. persicaria* in Dorn (p. 1069), but differs by having stipitate glands on upper stems and peduncles (vs. glands sessile if present).

*Significance*. First record for WY, a range extension of ca. 130 km from Weld Co.,

CO (Barkley). Erroneously reported from Albany Co., WY (Barkley) based on *Stephens 43631* (KANU), a collection of *P. lapathifolium* L. in early flower.

The Rocky Mountain Institute of Energy and Environment of the University of Wyoming provided financial support for much of the field work by Hartman, Nelson, and Dueholm.—RONALD L. HARTMAN, B. E. NELSON, and KEITH H. DUEHOLM, Department of Botany, University of Wyoming, Laramie 82071 and ROBERT D. DORN, Wyoming Department of Environmental Quality, Cheyenne 82002. (Received 5 Mar 1980; accepted 19 Jun 1980; final version received 7 Jul 1980.)

## NOTES AND NEWS

ISOZYME VARIABILITY IN *Cortaderia selloana* AND ISOZYME CONSTANCY IN *C. jubata* (POACEAE).—*Cortaderia selloana* (Schult.) Asch. et Graebn. (pampas grass), a dioecious species, and *C. jubata* (Lem.) Stapf, an agamospermous one (Costas-Lippmann, Bot. Gaz. (Crawfordsville) 140:393–397. 1979) are the popular horticultural cortaderias in California. Both are native in South America. *Cortaderia selloana* is commonly seen in cultivation whereas *C. jubata* has escaped from ornamental plantings, becoming an aggressive weed in coastal California (Costas-Lippmann, *Fremontia* 4:25–27. 1977). and in New Zealand (Connor, *New Zealand J. Bot.* 3:17–23. 1965).

The fact that these two species are not easily distinguishable morphologically before flowering (Conert, *Die Systematik und Anatomie der Arundineae*. 1961; Costas-Lippmann, Ph.D. diss. Univ. Calif. Berkeley. 1976) raised the question of how much variability could be detected electrophoretically. Five enzyme systems (peroxidases, esterases, acid phosphatases, leucine-amino peptidases and amylases) were analyzed using standard techniques for starch electrophoresis.

Leaf material from the sheath close to the ligule was collected from plants of both species growing in cultivation in the research area of the University of California at Davis, and from naturally occurring populations in California. The plants at Davis were grown from seeds collected in natural populations in Argentina and Ecuador, and from naturalized populations in New Zealand.

California material of *Cortaderia selloana* was collected from Grizzly Island Road, Solano Co. (from two sites with different moisture conditions, close to the Montezuma Bridge) and Golden Gate Park, San Francisco Co. (from four plantings around Mallard Lake and two at the entrance of the Conservatory). Material of *C. jubata* came from Elk River, Humboldt Co. (cut-over land in the Redwood Forest, 8 km se. of Eureka); Redwood Road and Skyline Blvd., Oakland, Alameda Co. (serpentine soil); Oakland International Airport, Alameda Co. (filled land); Point Isabel, Contra Costa Co. (abandoned field); and Lucia, Monterey Co. (seacliff).

In *Cortaderia selloana*, amylase and leucine-aminopeptidase had only one band. The peroxidases, acid phosphatases, and esterases showed polymorphic systems. Values for the polymorphic index (PI) of Marshall and Allard (*Heredity* 25:373–382. 1970) suggest that variability in the first two systems is greatest in the material from Argentina (General Roca) and slightly less in the material from New Zealand. A slightly higher PI was obtained for New Zealand esterases than for Argentinian esterases. All of the Californian material showed less variation for these three systems. In particular, all the plants of the Golden Gate Park population proved to be virtually identical (one plant appeared to have an extra anodic band in the peroxidase system). This supports an early supposition that all these plants were derived from cuttings from a single plant (or very few plants) at the time of landscaping the area.

Enzyme activity, as judged by staining intensity, seemed comparable in all systems and populations with the exception of esterases in the material from Grizzly Island